button is pressed and then the server display device thus informed issues a plurality of commands to respective display devices so as to achieve a desired display. Step S21 is almost the same as step S19 except that the representation changes from "next page" to "previous page." Another difference is the number of increase/decrease of the page number. Specifically, the number is negative (−(number of display devices)).

FIG. 19 illustrates step S23 in FIG. 16. In step S50, whether or not the subject device ID is in a communication history list (described later) is determined. If the answer is Yes, step S51 is conducted and step S52 is conducted if the answer is No. As shown in (g) in FIG. 15, the connection check command has a list of device IDs following the connection check command ID. The communication history list consists of IDs of display devices to which the connection check command has been transmitted and forwarded and accordingly represents the history (path) of communication.

In step S51, since the connection check command has already passed through the subject device once, the communication check command is directly sent to the display device ID preceding the subject ID in the communication history list, and then this flow reaches the end.

In step S52, whether or not there is a display device to which forward is done is determined. If the answer is Yes, step S53 is conducted and step S54 is conducted if the answer is No. In step S53, the subject device ID is added to the end of the communication history list and the list is forwarded, and then this flow reaches the end. Step S54 corresponds to the end of the communication path since there is no display device to which forward is done. Accordingly, the subject device ID is added to the end of the communication history list to be returned to the source display device, and the flow attains the end.

For example, suppose that five display devices are coupled as shown in FIG. 20A and a connection check command is transmitted from the display device denoted by ID1. At the time of transmission, only the source device "1" is in the communication history list. Display device ID2 forwards the communication list to display devices ID3 and ID5 since the communication list does not include ID2. At this time, the communication history list has "1, 2." As there is no ID3 in the communication history list, display device ID3 forwards it to display device ID4. At this time, the communication history list has "1, 2, 3." Although the communication list does not have ID4, there is no device to forward the list, therefore, display device ID4 adds ID4 to the end of the communication history list and returns it to display device ID3. At this time, the communication history list has "1, 2, 3, 4." Similarly, display device ID5 returns the list back to display device ID2. At this time, the communication history list has "1, 2, 5."

Since the communication history list has ID3, display device ID3 returns the list to display device ID2 which precedes 3 in "1, 2, 3, 4." Similarly, display device ID2 returns the list back to display device ID1. Display device ID1 thus receives two kinds of returned communication history lists, "1, 2, 3, 4" as shown in (a) in FIG. 21 and "1, 2, 5" as shown in (b) in FIG. 21.

FIG. 22 is a flow chart of a display device (subject display device) which transmits the connection check command. In step S40, the subject display device enters its device ID as the first device ID in the history, and broadcasts the connection check command to all devices connected thereto. In step S41, the display device receives all of the returned connection check commands.

As explained in conjunction with FIG. 19, the connection check command returns to the source display device. If display device ID1 in FIG. 20A transmits the connection check command, the communication history lists shown in (a) and (b) in FIG. 21 are returned. There is no means for perfectly confirming whether or not all connection check commands are returned. However, the processing of the connection check command is not so troublesome and the communication is done instantly. Therefore, an appropriate timeout may be secured to shorten the reception processing.

In step S42, a list of all device IDs is obtained. In order to obtain the list simply, communication histories of all of the returned commands are merged and sorted. (C) in FIG. 21 illustrates that the IDs are sorted based on ID numbers. After the sorting, the overlapping of the ID numbers is eliminated so as to obtain all IDs of the coupled devices which are sorted. (D) in FIG. 21 illustrates that the overlapping ID numbers are eliminated. Then, the number of devices in the list is counted. In (d) of FIG. 21, the number is 5.

In step S43, the connection list command is broadcasted. The connection list command may be formed of the connection list command ID, the number of connected devices, and the list of device IDs arranged in this order. The number of devices and the list are obtained in step S42.

In step S9 in FIG. 14, the connection check command is broadcasted when connection or disconnection is made. For example, suppose that devices ID2 and ID3 in FIG. 20A are disconnected. Then, display devices ID2 and ID3 respectively transmit connection check commands. Consequently, display device ID2 obtains the display device list as shown in (e) in FIG. 21 and display device ID3 obtains the display device list as shown in (f) in FIG. 21. In this way, the correct number of connected display devices can be obtained after disconnection is made.

On the contrary, suppose that the disconnected display devices ID2 and ID3 are coupled again. Display devices ID2 and ID3 respectively transmit connection check commands. If a display device is newly connected, one of the connected display devices may transmit the connection check command. Even if both devices transmit the commands, the result is the one as shown in (d) in FIG. 21 and thus no problem occurs.

Accordingly, coupling and decoupling are automatically conveyed to all display devices so that all of the display devices can recognize which display devices are currently coupled. Since the coupling status is known, this information can be used for designation of the destination in (a) of FIG. 15 and can be used for determining the number of increase/decrease of the page number in step S32 of FIG. 17.

FIG. 23 is a flow chart illustrating details of the processing by data acquiring unit 1 in FIG. 1. In step S60, determination is made on whether or not a required data is in a local memory. If the answer is Yes, step S62 is conducted and step S61 is conducted if the answer is No. The required data could be designated by page ID, for example, or designated by file name. Any method of designation may be employed depending on the purpose. If the page ID is used, it can be handled on an existing file system having a conversion table of the page ID and file name, for example.

In step S62, the required data is passed from the local memory to controller 4 and this flow reaches the end. In step S61, since the data is not stored in the local memory, whether or not another connected display device holds the data is asked. Specifically, the data transmission request command shown in (c) in FIG. 15 is broadcasted. After the broadcasting, step S63 is conducted.